0101-055
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

THOMASSET — Atty. Ref.: 2590-166; Confirmation No. 7345

Appl. No. 10/591,126 — TC/A.U. 1794

Filed: August 30, 2006 — Examiner: Erik Kashnikow

For: MULTILAYER DOSE HAVING A CONCAVE SURFACE

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RULE 132 DECLARATION OF JACQUES THOMASSET

I, JACQUES THOMASSET, hereby declare as follows:

1. I am a citizen of France, and I reside at 308 avenue Seuvay 74500 Neuvecelle (France). I am employed at AISAPACK HOLDING S.A. in Vouvry, Switzerland.

2. I have a degree of Ph. D. in Chemical Engineering from Ecole Polytechnique de Montreal (Canada) ; a master in polymer processing form Cemef (France) and I'm graduated from Ecole nationale supérieure des Arts et Métiers (France). I have been employed in the Petrochemical Industry for 11 years and in the packaging industry for 8 years. My work experience has included research and development in the field of rheology of melted polymers; in the field of resins development (PA12, PA11), and in the field of polymer processing mainly for packaging

industry. I am skilled in the field of polymer processing, and have approximately 15 years of experience working in this field. I am listed as an inventor on numerous patents.

3. As the inventor of the subject U.S. patent application, I have read and understand the patent application and the pending claims as set forth in the Amendment filed at the U.S. Patent and Trademark Office (USPTO) on October 14, 2008, as well as the proposed amended claims attached to this Declaration. I have also read the USPTO's Office Action dated June 12, 2008, to which the Amendment replied, and I have read the USPTO's Final Office Action dated December 24, 2008. I have also read and understand the references cited in these two Office Actions, i.e., Kudert (USP 6,332,767) and Van Schaftingen (USP 6,808,673).

4. I am not aware of any prior art that discloses or suggests the invention covered by the pending claims in the Amendment of October 14, 2008, or the attached amended claims.

5. In the Final Office Action, the following prior art rejections have been asserted:

a. On pages 2-4 of the Final Office Action, claims 1-2, 4-9 and 11-12 stand rejected as allegedly being anticipated by Kudert (USP 6,332,767).

b. At the top of page 5 of the Office Action, claims 3 and 10 stand rejected as allegedly being obvious over Kudert (USP 6,332,767).

c. At the bottom of page 5 and continuing to the top of page 6 of the Office Action, claims 13-14 stand rejected as allegedly being obvious over Van Schaftingen (USP 6,808,673).

6. The Examiner has set forth his positions on not only pages 2-6 of the Office Action, but also on pages 7-9. Although the Examiner agrees that Kudert simply

teaches a parison and does not disclose a dose, the Examiner contends that Kudert's parison has the same structural features as our claimed dose in claims 1-5, and that Kudert's parison directly relates to our claimed multilayer object in claims 6-12. As noted in the paragraph at the bottom of page 7 of the Office Action, the Examiner repeats his argument that the dose in claims 1-5 does not result in a structural difference compared to the parison disclosed in Kudert. The Examiner makes similar arguments with respect to claims 13-14 and the disclosures in the Van Schaftingen patent.

7. The Examiner's positions are factually incorrect as explained below, i.e., there are structural differences between the claimed dose and the Kudert patent's parison, a dose and a parison are not the same, a dose and a parison do not have the same ability to form a container, and the Van Schaftingen patent's devices and processes do not disclose or suggest the inventions claimed in claims 13 and 14.

8. The Kudert's patent describes a multilayer injection molding device for producing multilayer objects. As disclosed in this patent, a great diversity in shape or size of molded objects can be manufactured. Kudert takes the example of a multilayer parison which is necessary for the production of a multilayer bottle. The manufacture of PET bottles requires at least two steps: the first one disclosed in Kudert's patent consists of molding a parison by injection; and the second step consists of blowing the parison inside a mould cavity by the so called stretch blow molding process. In the industry, the parison disclosed in Kudert's patent is commonly named a preform. This is important to understand and underline that in the first step of this process the parison is

a molded object, even if this object is transformed later into a bottle by the stretch blow molding process. In my opinion, this point is a fundamental difference with the dose witch is disclosed in my patent application. This difference is detailed and discussed hereafter.

The parison disclosed in Kudert's patent, like all molded objects made by injection molding , results from filling, by injection, a mould with melted polymer, and then from cooling the polymer inside the mold cavity below the melting point in order to solidify the resin and unmold the object. A multilayer parison can be obtained thanks to a controlled filling of the mold cavity with several resins. This filling method generally consists of sequential or simultaneous filling of the resins, or a combination of both, and is a key point of the multilayer structure development inside the molded part. The problematic of Kudert's patent is to describe the multilayer filling method and device in order to produce multilayer object by injection molding. The problematic of my patent application is to describe the multilayer dose which is transferred in the mold and the compression molding process which is used to produce the multilayer object. If a parallel was to be made between injection molding and compression molding processes, the filling stage in injection would be compared to the dose extrusion and compression in the compression process. Both processes are used to manufacture molded objects. The parison shape and multilayer structure disclosed in Kudert's patent can be either the result of injection or compression processes. However, the way to achieve the multilayer structure inside the object would be different because in injection molding the sequence of filling is the key whereas in compression molding the multilayer dose extruded before compression is the key point.

The multilayer compression molding process disclosed in my patent application discusses essentially the multilayer dose that is the key point to achieve multilayer object. The compression molding process contains a first step consisting of extruding a multilayer dose of molten resins, a second step consisting of transferring the molten multilayer dose into the mold cavity, and finally a last step consisting of molding the object by compression of the dose in the mold. In the last step, the mold closure generates compression of the dose and flow of molten resins. From the multilayer flow during compression is obtained the final layer distribution inside the molded object. The multilayer structure of the object is significantly different from multilayer structure in the dose before compression. The difficulty to reach the desired layer distribution is due to the multilayer flow of the melted resins in the compression process. The aim of my patent application is to define the multilayer dose characteristics and its position inside the mold cavity before compression in order to obtain the desired multilayer structure in the finished object.

In my patent application, some examples of molded objects, which can be obtained by compression molding of the multilayer concave dose, are illustrated figures 10 and 11. A multilayer tube shoulder is disclosed figure 10 and a schematic closure is disclosed figure 11. Other examples of molded objects like multilayer parison (preform) could have been illustrated; and that is the reason why in my opinion there is no valid reason to estimate that the dose can be assimilated to a parison. The parison is the molded object; the dose is the molten quantity of resin transferred into the mold before molding in order to obtain the object.

The dose is formed by co-extrusion and then transferred very rapidly into the mold cavity in order to keep it molten during compression. The thickness of the dose is generally more than 10 times thicker than the molded object. The dose which is in the molten stage can't have the tolerances of a molded part, i.e. the molded perform (parison) which is disclosed in Kudert's patent. A dose is not a molded part and can't have the same thickness, nor the same accuracy, neither the same shape. A dose is molten whereas a molded part like the parison is solid.

In conclusion, it seems that the term parison used by Kudert to indicate a preform is at the origin of confusion between the dose and the preform. In the industry, the term parison is used in the extrusion blow-molding process to describe a molten extruded tube witch is blown into a cold mold to form blow molded containers. This technology is widely used to produce PE and PP bottles or technical parts such as the fuel tank for automotive industry. The blow molding process has similarity with the compression molding process in the way that in both processes a dose or a parison in the molten stage are used to mould the object. In the blow molding process the parison is blown, in the compression molding process, the dose is compressed. On the other hand, the molding process of the preform disclosed in Kudert patent is totally different. The preform is produced by injection molding. After cooling, this perform is heated to a temperature below the melting point and suitable for the bi-orientation process (near 95°C for PET). The preform disclosed in Kudert patent is then stretch blown to form a container like a bottle. I don't see any element of comparison between the preform disclosed in Kudert patent and the dose disclosed in my patent application.

To summarize, I believe that the preform disclosed in Kudert's patent doesn't anticipate my invention for the following reasons:

- The preform is a molded object, the dose is a molten quantity of resin
- The preform's shape, geometry and thickness have an accuracy not achievable with a dose in the molten stage
- The multilayer structure in the preform results from the injection molding filling process whereas the multilayer structure in a compression molded object depends on the structure of the dose.
- The dose is used to produce molded object, this object can be a preform
- The multilayer structures of the dose and of the compression molded object are different because the layers flow during the compression phase.
- There is no theoretical, physical or practical reason to compare a dose and a preform

9. With respect to the obviousness rejection of claims 13 and 14 based on the Van Schaftingen patent, this patent does not disclose or suggest the specific process of claim 13 and the specific product of claim 14. In fact, this patent does not include any drawings and discloses entirely different devices and processes. This patent discloses and teaches that a hollow body is formed from several multi-layer plastic elements that are welded together and comprise a barrier layer that is a barrier to liquids and to gases. The elements form an appendage that extends from an outer surface of the hollow body, wherein the appendage comprises two multi-layer plastic

layers, each of the two layers having a respective barrier layer. This is not the claimed device of claim 14, nor does it suggest the claim 14 device.

10. Furthermore, the Van Schaftingen patent's method for manufacturing the hollow body uses compression molding in a multi-part mold comprising welding kerbs. When the mold is being closed, the barrier layers of the multi-layer plastic elements are forced to flow into a shallow slot formed between the welding kerbs of the closed mold. A multi-part compression-blow-molding mold comprises the welding kerbs which, when the mold is closed, form a slot or space between them with a height of cross section that decreases towards the outside of the mold and which is extended by a shallow and broad slot intended to compress the plastic. This method is not the claimed process of claim 13, nor does it suggest the claim 13 process.

11. For at least the foregoing reasons and facts, the two cited prior art references do not disclose or suggest the claimed invention (either in the pending claims or in the amended claims attached hereto).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 06 02 2009

By: _____
JACQUES THOMASSET

AMENDED CLAIMS

1. (Currently Amended) A multilayer dose, comprising a first synthetic resin and at least one layer of functional resin imprisoned at least largely in said resin, wherein a part of its surface is concave, and wherein the multilayer dose is in the melt state and has an axis of symmetry for the realization of multilayer objects by compression molding.

2. (Previously Presented) The dose as claimed in claim 1, comprising an orifice, said concave surface being constituted by a part at least of the inner surface formed by the orifice.

3. (original) The dose as claimed in claim 2 in which the orifice forms a passage through the dose.

4. (Previously Presented) The dose as claimed in claim 3, in which the orifice forms a cavity which is open on one face of the dose.

5. (Previously Presented) The dose as claimed in claim 1, wherein the functional layer itself forms a multilayer structure comprising a layer of barrier resin imprisoned between two layers of adhesive resin.

6. (Currently Amended) A multilayer object obtained from a multilayer dose in the melt state as claimed in claim 1, wherein the object contains at least one portion in which the functional layer forms a fold.

7. (Previously Presented) The multilayer object as claimed in claim 6, having an axis of symmetry, wherein the functional layer forms a body of revolution centered about the axis of symmetry.

8. (Previously Presented) The multilayer object as claimed in claim 7, wherein said body of revolution is open.

9. (Previously Presented) The multilayer object as claimed in claim 8, wherein said body of revolution contains an opening centered on the axis of symmetry.

10. (Currently Amended) The multilayer object as claimed in claim 6, wherein the object contains an orifice forming a passage through the object.

11. (Currently Amended) The multilayer object as claimed in claim 6, wherein the object contains no orifice.

12. (Previously Presented) The multilayer object as claimed in claim 7, wherein said body of revolution is closed.

13. (Previously Presented) A production process for a multilayer dose in the melt state as claimed in claim 1, wherein the resins constituting the dose are extruded simultaneously and coaxially, initially in a rectilinear direction, and in that the direction of extrusion is then modified in such a way as to form said concave surface.

14. (Previously Presented) A device for producing a multilayer dose in the melt state as claimed in claim 1 and using a production process for a multilayer dose in the melt state as claimed in claim 1, wherein resins constituting the dose are extruded simultaneously and coaxially, initially in a rectilinear direction, and in that the direction of extrusion is then modified in such a way as to form said concave surface wherein the device comprises a passage for the linear, simultaneous and coaxial flow of the resins constituting the dose and means for modifying the direction of extrusion in such a way as to form said concave surface, said means being mounted so as to slide inside the passage.